

## A NEW GENUS *ADELONEMA* (NEMATODA: OXYURIDAE) FROM AUSTRALIAN PHALANGERID MARSUPIALS

by PATRICIA M. MAWSON\*

### Summary

MAWSON, P. M. (1978) A new genus *Adelonema* (Nematoda: Oxyuridae) from Australian phalangerid marsupials. *Trans. R. Soc. S. Aust.* **102**(8), 223-226, 30 November, 1978.

*Adelonema* n.g. is proposed for *Oxyuris* (s.l.) *trichosuri* syn. *Syphacia trichosuri* Johnston & Mawson, hitherto known only from the female. Males are described from the type host *Trichosurus vulpecula* and from *T. caninus*. The new genus is close to *Austroxyuris* J. & M. differing in the development of structures in the buccal cavity, particularly clearly seen when examined by scanning electron microscope.

### Introduction

Female oxyurids were first recorded from *Trichosurus vulpecula* in Queensland as *Syphacia trichosuri* Johnston & Mawson (1938). The description was revised later (Mawson 1964) from fresh material in which only females were present. Recently both males and females have been taken from several host animals. The species is found to differ from other oxyurids so far described and a new genus is proposed for it.

### *Adelonema* gen. nov.

**Diagnosis:** Oxyuridae: Post oesophageal lateral alae present. Head marked off from body by annular constriction and bearing four single submedian papillae and two lateral amphids. Mouth opening more or less circular; buccal capsule more or less circular in transverse section with six longitudinal ridges projecting anteriorly as three large and three smaller pseudolabia. Anterior end of oesophagus projects as three lobes into base of buccal cavity. Oesophagus long; excretory pore post oesophageal. Male: with ventral and lateral caudal inflation, ending just behind cloaca, body ending in long spike. Four pairs of pedunculated and one pair sessile caudal papillae. Spicule single. Female: tail long, tapering; vulva about mid body, uteri opposed; eggs not operculate. Parasitic in Australian phalangerid marsupials. Type species: *Adelonema trichosuri* (Johnston & Mawson).

### Discussion

*Austroxyuris* Johnston & Mawson, *Parauastroxyuris* Mawson and *Macropoxyuris* Mawson are distinguished from other oxyurids (Petter & Quentin 1976) by the presence of a buccal capsule with inter-radial lamellae. These lamellae are present in the new genus, projecting as small lip-like cones. In addition three radial lamellae are developed at the anterior end of the buccal capsule and project as three cuticular lobes. These six projecting structures are referred to as 'pseudolabia', as they appear to arise from within the buccal capsule, not from the cuticle around the mouth.

### *Adelonema trichosuri* (Johnston & Mawson)

#### FIGS 1-6

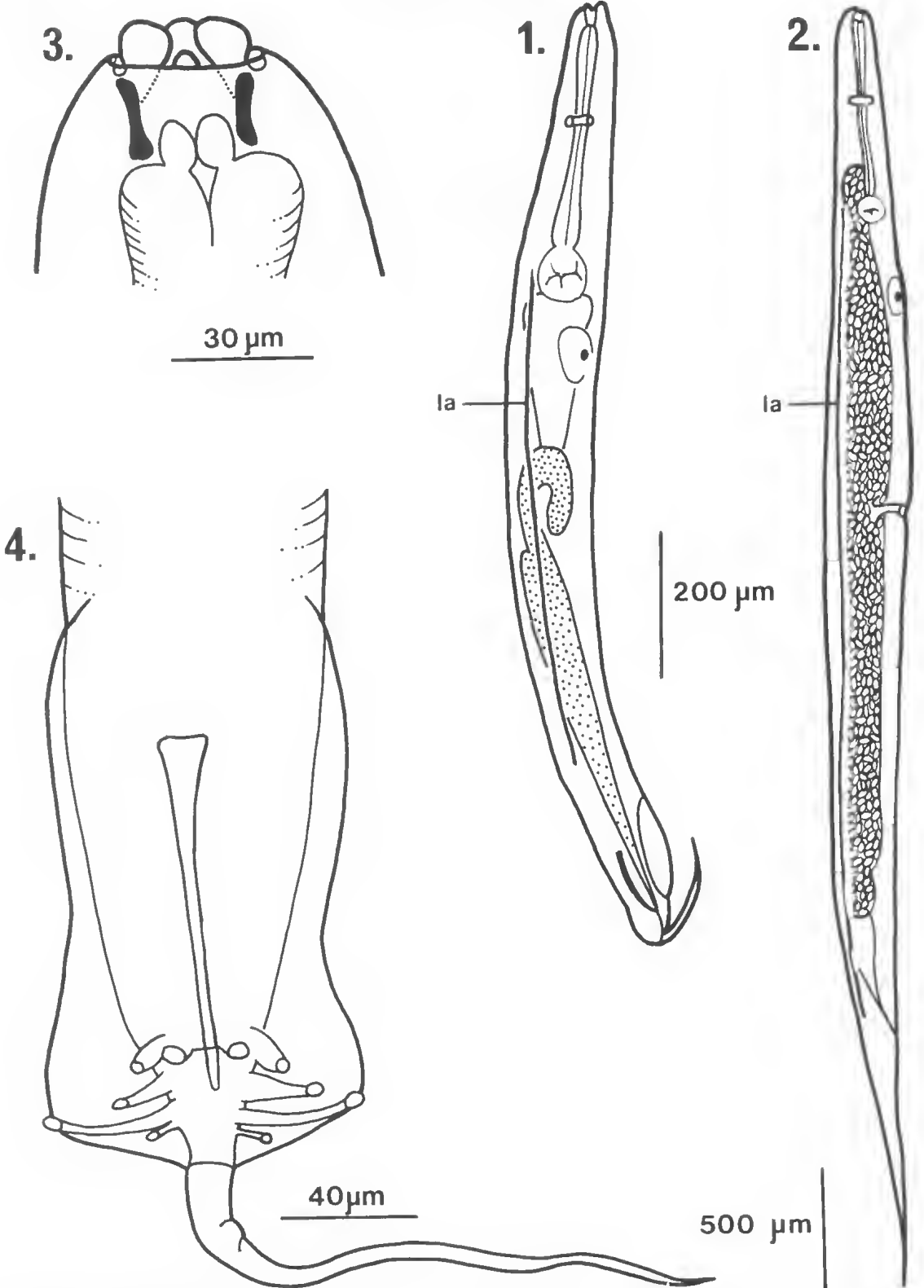
*Syphacia trichosuri* Johnston & Mawson 1938, p. 194 (from *Trichosurus vulpecula*, Queensland).  
*Oxyuris* (s.l.) *trichosuri* (Johnston & Mawson): Tiner (1948), p. 89; Mawson (1964), p. 259 (from *T. vulpecula*, Queensland).

Hosts and localities: *Trichosurus vulpecula* Kerr, Kangaroo I. S. Aust.; *T. caninus* Ogilby, Clouds Creek, N.S.W.

Males 1.7-2.1 mm long, females 5.1-6.2 mm. Body of male almost cylindrical, ending suddenly in tail spike, that of female tapering very slightly to head and gradually in region of tail. Lateral alae present in both sexes, from base of oesophagus nearly to anal region.

Cuticle around mouth thickened, cushion-like, with central circular mouth through which

\* Department of Zoology, University of Adelaide, North Tce, S. Aust. 5000.



*Adelonema trichosuri*. Fig. 1: Male. Fig. 2: Female. Fig. 3: head of female, lateral view. Fig. 4: posterior end of male, ventral view.



*Adelonema trichosuri*. Fig. 5: anterior end of female. The three lips have lost their turgidity during the drying process. Fig. 6: enlargement of part of Fig. 5, showing pores in cuticle, and part of one (radial) pseudolabium.

project three prominent radial and three small triangular inter-radial pseudolabia. Buccal capsule more or less cylindrical thickened externally both anteriorly and posteriorly. Three radial and three inter-radial ridges arise internally from buccal capsule at about its midlength, becoming larger anteriorly and projecting as six pseudolabia.

Oesophagus (345–375  $\mu\text{m}$  in male, 850–1100  $\mu\text{m}$  in female), about 1/5–1/6 (male) or 1/5–1/8 (female) of body length, with nerve ring a little in front of its midlength. Excretory pore post-oesophageal.

Male: ventral and lateral cuticle of posterior end inflated, particularly just behind cloaca. One pair of sessile and four pairs of pedunculate papillae of which third pair is very long. Tail ends in spike 170–200  $\mu\text{m}$  long. Spicule 100–120  $\mu\text{m}$  long, single, tapering, the distal 20  $\mu\text{m}$  less chitinised.

Female: Tail 960–1300  $\mu\text{m}$  long. Vulva between 1/3–1/2 body length from anterior end. Eggs 49–50 x 25–26  $\mu\text{m}$ , without operculum.

This species was considered by Mawson (1964) to lack inter-radial plates in the buccal capsule, but examination with scanning electron microscope showed that these are present (Fig. 5). The same procedure showed the presence of numerous fine pores over part of the cuticle at the anterior end (Fig. 6). Specimens from *T. caninus* are very slightly shorter than those from Kangaroo Island.

#### Acknowledgments

I am grateful for the material from *Trichosurus caninus* which was kindly given to me by Dr Paul Presidente, Veterinary School, University of Melbourne. The photo micrographs were taken by E.T.E.C. Autoscan in the Central Electron Optical Laboratory, University of Adelaide. I am indebted to Dr Karl Bartusek of this laboratory for help in taking the photographs.

## References

- JOHNSTON, T. H. & MAWSON, P. M. (1938) Some nematodes from Australian marsupials. *Rec. S. Aust. Mus.* **6**, 187-198.
- MAWSON, P. M. (1964) Some nematoda (Strongylina and Oxyurina) from kangaroos (*Macropus* spp.) from Eastern Australia. *Parasitol.* **54**, 237-262.
- PETTER, A. J. & QUENTIN, J. C. (1976) Keys to genera of the Oxyuroidea. pp. 1-30, No. 4 in CIH Keys to the nematode parasites of vertebrates. Commonwealth Agricultural Bureau, England.
- TINER, J. D. (1948) *Syphacia eutami* n. sp. from the Least Chipmunk, *Eutamias minimus*, with a key to the genus (Nematoda: Oxyuridae). *J. Parasitol.* **34**, 87-92.